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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/830,356	06/05/2001	Kazuya Takahashi	109380	4958

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EXAMINER	
CAO, HUEDUNG X	
ART UNIT	**PAPER NUMBER**
2671	11

DATE MAILED: 01/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/830,356	TAKAHASHI, KAZUYA	
	Examiner	Art Unit	
	Huedung X Cao	2671	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 November 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kirkland (US 5986669) in view of Kirk et al. (US 6239808 B1).

As per claim 1, Kirkland teaches an image generating system which generates a three dimensional image of an object formed of a polygon, comprising:

means which detect a vertex which is out of a drawable range (Kirland, col. 5, lines 21-47) in a polygon arranged in a three dimensional space which is subject to coordinate transformation into a screen coordinate system (Kirk, col. 1, lines 24-26). It would have been obvious to one of ordinary skill in the art at the time the invention was made to transform a three dimensional space into a screen coordinate system in order to define screen position and a depth value z to determine how near a vertex is to the screen and thus whether the vertex is viewed with respect to other points at the same screen coordinate.

means which scissors the polygon to generate a new vertex for specifying the scissored polygon (Kirkland, col. 2, lines 34-36); and

means which generates an image of an object formed of the polygon containing the new vertex (Kirkland, col. 5, lines 63-64) .

Claim 2 adds into claim 1, wherein a polygon containing a vertex which is out of a drawable range is scissored at a portion containing the vertex in a predetermined plane (Kirkland, col. 2, lines 59-66; and col. 4, lines 58-60).

Claim 3 adds into claim 1, wherein a polygon is scissored in a plane which specifies a viewing angle range (Kirkland, figure 2).

Claim 4 adds into claim 2, wherein a polygon is scissored in a plane which specifies a viewing angle range (Kirkland, figure 2).

Claim 5 adds into claim 1, wherein the polygon containing the detected vertex is scissored at a polygon containing the detected vertex (Kirkland, col. 4, line 58-col. 5, line 7);

wherein a polygon arranged in a three dimensional space is subjected to coordinate transformation into a screen coordinate system, to detect an undrawable vertex (Kirk, col. 1, lines 24-26). It would have been obvious to one of ordinary skill in the art at the time the invention was made to transform a three dimensional space into a screen coordinate system in order to define screen position and a depth value z to determine how near a vertex is to the screen and thus whether the vertex is viewed with respect to other points at the same screen coordinate.

Claim 6 adds into claim 2, wherein the polygon containing the detected vertex is scissored at a polygon containing the detected vertex (Kirkland, col. 4, line 58-col. 5, line 7);

wherein a polygon arranged in a three dimensional space is subjected to coordinate transformation into a screen coordinate system, to detect an undrawable vertex (Kirk, col. 1, lines 24-26). It would have been obvious to one of ordinary skill in the art at the time the invention was made to transform a three dimensional space into a screen coordinate system in order to define screen position and a depth value z to determine how near a vertex is to the screen and thus whether the vertex is viewed with respect to other points at the same screen coordinate.

Claim 7 adds into claim 3, wherein the polygon containing the detected vertex is scissored at a polygon containing the detected vertex (Kirkland, col. 4, line 58-col. 5, line 7);

wherein a polygon arranged in a three dimensional space is subjected to coordinate transformation into a screen coordinate system, to detect an undrawable vertex (Kirk, col. 1, lines 24-26). It would have been obvious to one of ordinary skill in the art at the time the invention was made to transform a three dimensional space into a screen coordinate system in oeder to define screen position and a depth value z to determine how near a vertex is to the screen and thus whether the vertex is viewed with respect to other points at the same screen coordinate.

Claim 8 adds into claim 4, wherein the polygon containing the detected vertex is scissored at a polygon containing the detected vertex (Kirkland, col. 4, line 58-col. 5, line 7);

wherein a polygon arranged in a three dimensional space is subjected to coordinate transformation into a screen coordinate system, to detect an undrawable

vertex (Kirk, col. 1, lines 24-26). It would have been obvious to one of ordinary skill in the art at the time the invention was made to transform a three dimensional space into a screen coordinate system in oeder to define screen position and a depth value z to determine how near a vertex is to the screen and thus whether the vertex is viewed with respect to other points at the same screen coordinate.

As per claim 9, Kirkland teaches a computer program embodied on an information storage medium or in carrier wave, comprising a program for implementing:

means which detect a vertex which is out of a drawable range (Kirland, col. 5, lines 21-47) in a polygon arranged in a three dimensional space which is subject to coordinate transformation into a screen coordinate system (Kirk, col. 1, lines 24-26). It would have been obvious to one of ordinary skill in the art at the time the invention was made to transform a three dimensional space into a screen coordinate system in order to define screen position and a depth value z to determine how near a vertex is to the screen and thus whether the vertex is viewed with respect to other points at the same screen coordinate.

means which scissors the polygon to generate a new vertex for specifying the scissored polygon (Kirkland, col. 2, lines 34-36); and

means which generates an image of an object formed of the polygon containing the new vertex (Kirkland, col. 5, lines 63-64).

Claim 10 adds into claim 9, wherein a polygon containing a vertex which is out of a drawable range is scissored at a portion containing the vertex (Kirkland, col. 2, lines 59-66; and col. 4, lines 58-60).

Claim 11 adds into claim 9, wherein a polygon is scissored in a plane which specifies a viewing angle range (Kirkland, col. 2, lines 59-66; and col. 4, lines 58-60).

Claim 12 adds into claim 10, wherein a polygon is scissored in a plane which specifies a viewing angle range (Kirkland, figure 2).

Claim 13 adds into claim 9, wherein the polygon containing the detected vertex is scissored at a polygon containing the detected vertex (Kirkland, col. 4, line 58-col. 5, line 7);

wherein a polygon arranged in a three dimensional space is subjected to coordinate transformation into a screen coordinate system, to detect an undrawable vertex (Kirk, col. 1, lines 24-26). It would have been obvious to one of ordinary skill in the art at the time the invention was made to transform a three dimensional space into a screen coordinate system in oeder to define screen position and a depth value z to determine how near a vertex is to the screen and thus whether the vertex is viewed with respect to other points at the same screen coordinate.

Claim 14 adds into claim 10, wherein the polygon containing the detected vertex is scissored at a polygon containing the detected vertex (Kirkland, col. 4, line 58-col. 5, line 7);

wherein a polygon arranged in a three dimensional space is subjected to coordinate transformation into a screen coordinate system, to detect an undrawable vertex (Kirk, col. 1, lines 24-26). It would have been obvious to one of ordinary skill in the art at the time the invention was made to transform a three dimensional space into a screen coordinate system in oeder to define screen position and a depth value z to

determine how near a vertex is to the screen and thus whether the vertex is viewed with respect to other points at the same screen coordinate.

Claim 15 adds into claim 11, wherein the polygon containing the detected vertex is scissored at a polygon containing the detected vertex (Kirkland, col. 4, line 58-col. 5, line 7);

wherein a polygon arranged in a three dimensional space is subjected to coordinate transformation into a screen coordinate system, to detect an undrawable vertex (Kirk, col. 1, lines 24-26). It would have been obvious to one of ordinary skill in the art at the time the invention was made to transform a three dimensional space into a screen coordinate system in order to define screen position and a depth value z to determine how near a vertex is to the screen and thus whether the vertex is viewed with respect to other points at the same screen coordinate.

Claim 16 adds into claim 12, wherein the polygon containing the detected vertex is scissored at a polygon containing the detected vertex (Kirkland, col. 4, line 58-col. 5, line 7);

wherein a polygon arranged in a three dimensional space is subjected to coordinate transformation into a screen coordinate system, to detect an undrawable vertex (Kirk, col. 1, lines 24-26). It would have been obvious to one of ordinary skill in the art at the time the invention was made to transform a three dimensional space into a screen coordinate system in order to define screen position and a depth value z to determine how near a vertex is to the screen and thus whether the vertex is viewed with respect to other points at the same screen coordinate.

Response to Arguments

3. Applicant's arguments filed 11/03/2003 have been fully considered but they are not persuasive.

Applicant argues that neither Kirkland or Kirk disclose "means which detect a vertex which is out of drawable range in a polygon arranged in a three dimensional space which is subject to coordinate transformation into a screen coordinate system". However, Examiner disagrees with Applicant, Kirkland does teach means which detect a vertex which is out of drawable range in his method of clipping primitives (column 5, lines 21-47) and Kirk teaches a polygon arranged in a three dimensional space which is subject to coordinate transformation into a screen coordinate system in column 1, lines 24-26.

Conclusion.

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Inquires

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Huedung Cao** whose telephone number is **(703) 308-5024.**

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Mark Zimmerman,** can be reached at **(703) 305-9798**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 305-0377.

Huedung Cao
Patent Examiner

MARK ZIMMERMAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600